

**REMARKS/ARGUMENTS**

Claims 16-49 are pending. By this Amendment, claims 1-7 and 11-15 are canceled in favor of new claims 16-49 presented herewith. Reconsideration in view of the above amendments and the following remarks is respectfully requested.

At the outset, attached hereto is an Information Disclosure Statement citing the prior art information listed in the International Search Report transmitted to the International Bureau upon entry of the present application into the U.S. National Phase.

In addition, the U.S. patent equivalent of WO 00/46486 is cited herewith since the patent issued following the filing of this application. For the Examiner's convenience, all of the prior art considered during prosecution of U.S. Patent No. 6,561,590 is provided herewith. Finally, the enclosed Information Disclosure Statement includes a copy of Australian Patent Application No. 18912/70.

Turning now to the Office Action, paragraph 1 objects to old claim 6 as being confusing. By this Amendment, claim 6 has been replaced by new claim 26, which uses the term "longitudinally" in a way which should obviate the objection. Reconsideration and withdrawal of the objection are respectfully requested.

Claims 1, 14 and 15 were rejected under 35 U.S.C. § 103(a) over Bodine (U.S. Patent No. 4,527,637). Inasmuch as this claim may be applied to new claims 16-49, it is respectfully traversed.

As admitted in the Office Action, Bodine is silent about the use of a disc cutter. To make up for this deficiency, it appears that the Examiner is relying on the disclosure of Walker et al., U.S. Patent No. 4,341,273, even though Walker et al. is not part of the formal rejection. In any event, this rejection is respectfully traversed.

The Examiner states that Walker et al. teaches that "[r]oller cone cutters, disc cutters etc. are well known and old cutters." See page 2 of the Office Action. However, Walker et al. states that "... the invention may also be applied in roller bits, such as roller cone bits, disc bits, etc." Column 7, lines 16-18. Thus, Walker et al. actually does not mention disc cutters, *per se*.

Even if Walker et al. shows equivalence between roller cone bits and disc cutters (which it does not) there is still no teaching to construct the disc cutter according to the language of claim 16. In particular, the Examiner has failed to teach disc cutters which are driven in an oscillating manner and moveable in a nutating manner, per claim 16. Applicants were the first to invent a disc cutter which was both driven in an oscillating manner and movable in a nutating manner, as recited in claim 16. Nothing in Bodine or Walker et al. suggests a disc cutter that is both driven in an oscillating manner, and moveable in a nutating manner. Any suggestion to do so is derived from impermissible hindsight, not a suggestion from the prior art.

In addition, new claim 16 sets forth an inertial reaction mass for stabilizing the disc cutter. As set forth on page 3, lines 28-31, the inertial reaction mass ensures that the cutting mechanism does not move away from the rock being cut, rather than cut the rock. Non-limiting examples of the inertial reaction mass are shown in Figures 3-5 and described on pages 7 and 11.

Canceled dependent claim 14 corresponds to new claim 29 and is patentable by virtue of its dependency on claim 16, as well as the additional subject matter it recites in combination with claim 16.

Reconsideration and withdrawal of the rejection are respectfully requested.

In paragraphs 3 through 13, a series of rejections are applied to individual ones of claims 1-7 and 11-15. However, all of these rejections have one thing in common: they all rely on prior art which does not teach or suggest the combination of a disc cutter which is driven in an

oscillating manner and movable in a nutating manner. No single prior art reference makes up for this feature, and the reliance on Walker et al. does not make up for this feature because even if Walker et al. shows the equivalence between roller bits and disc cutters, it does not teach or suggest a disc cutter that is driven in an oscillating manner and movable in a nutating manner, as recited in claim 16. Dependent claims 17-49 set forth further features supported in the application which are not taught or suggested by the applied prior art references.


In view of the above amendments and remarks, Applicants respectfully submit that all the claims are patentable and that the entire application is in condition for allowance.

Should the Examiner believe that anything further is desirable to place the application in better condition for allowance, he is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

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